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ABSTRACT

The Ontario Institute for Studies in Education and the Canadian Mothercraft Society are running a day care program for infants (from 3 to 30 months of age) designed to facilitate their cognitive, personality, and social development through personalized adult-child interaction, guided learning situations, free play, and specialized care. Collaboration with the home is extensive. This document reports uncompleted but encouraging midyear program results. A sample of inner city disadvantaged children and two samples of middle class children were tested twice each on the Bayley Mental Scale and the Stanford-Binet IQ Test. The five disadvantaged children were, on the average, 4.9 months old when they entered the program and had their first testing. Their second testing, 8 months later, showed a highly significant gain. The first group of advantaged children (N=6) was tested at an average age of 21.6 months, after 2 months in the program, and again 8 months later. The gain score for this group was inconsequential. The other group of middle class children (N=7) was tested at an average age of 11.4 months, after 2 months in the program, and again 6 months later. This group was tested again at an average of 26.7 months and their gain score was highly significant. The difference between the advantaged groups was attributed to time spent in the program. (MH)

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DEMONSTRATION INFANT DAY CARE AND EDUCATION PROGRAM

INTERIM REPORT
1969-1970

by

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The findings in this interim report are based on uncompleted mid year assessments of infants attending Canadian Mothercraft Society Day Care Centre. These results cover performance of selected samples of infants on the Bayley Mental Scale (MDI) and the Stanford-Binet IQ Test. These selected findings are reported in advance because of their obvious interest. They should preferably be read in conjunction with the extended progress report on investigations over the first year, 1968-69. A detailed description of the program, findings and implications is contained in the 1968-69 progress report.

In general, the program is an attempt to study and facilitate the cognitive, personality and social development of infants from about 3 to 30 months of age. The project is a collaborative effort undertaken jointly with the Ontario Institute for Studies in Education and the Canadian Mothercraft Society. The infants are drawn from both middle class, advantaged children of working mothers and children from disadvantaged families of largely non-working mothers. Methods are built around adult-child interaction in individual and small group, guided learning situations, free play and specialized care and daily routines. Flexible, personalized and warm handling of children together with intensive language, development of understanding of the world and of problem-solving skills are all stressed. Parent guidance is extensively developed to coordinate approaches employed in both the day care center and the home. The general developmental objectives are autonomy,

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adaptive problem-solving and social competence and creative, high level intellectual skills.

Results

The findings shown in the accompanying tables cover mental test score changes in a sample of inner city disadvantaged children (Table 1) and a comparison of the mental test score changes of two samples of middle class children (Table 2).

The mean gain over an 8 month period of 5 disadvantaged children who entered the program last spring and were tested (Time 1) when they were on the average about 4.9 months of age, to the recent testing (Time 2) when they were approximately 13 months of age is shown in Table 2. The change from a mean of 92 to a mean of 115.4 is a highly significant gain of 23.4 points. It will be noted that all except one child made very substantial gains. Note that for their initial testing these and all other children were tested only after a period of a month or two of adaptation at Mothercraft.

In Table 2 we see a comparison of the gains of two samples of advantaged children (children of working mothers) who started the program at different ages and participated for different lengths of time. Group A was tested when they were a mean of 21.66 months of age (Bayley IQ=118.67) after 2 months in the program. After a total of 10 months in the program when they were 29.33 months of age (Binet IQ=121.33), they had made an inconsequential gain of 2.67 points.

In contrast Group B was tested at a mean of 11.42 months of age,

when they scored 114 points on the Bayley. Six months later, after a mean of 8.21 months in the program when they were 17.57 months of age, they scored a mean of 127.87 points on the Bayley. On the final testing when they were 26.71 months of age (or close to the age of Group A at their final testing) they scored a mean of 143.57 points on the Binet, a highly significant total mean gain of 29.57 points over a 15.14 months span. Although the two groups were comparable in their IQ scores at initial testing (118.67 for Group A and 114 for Group B), at the final testing when both were at approximately the same age level, there was a highly significant mean Binet IQ difference of 22.24 points after 10.08 months in the program for Group A and 17.14 months in the program for Group B.

Implications

Taken in the context of findings previously reported in last year's progress report of the general development of social competence, socio-emotional relations (including inquisitiveness, cheerfulness, attentiveness, enthusiasm, verbal expressiveness, perseverance, contentment, etc.) and the advances in language development, these latest findings are encouraging. If confirmed on our accumulating sample pool, the findings would suggest that systematic programs based on highly personalized, emotional care and cognitive stimulation, when working in collaboration with the home, may have a high positive influence on all spheres of development on both middle class advantaged and working class disadvantaged children. These are extremely small samples with which to make many generalizations, but the consistency of our findings from last year to this year with respect to the value of earliness and duration of

treatment effects should be carefully weighed. They indicate that in programs of infant care and education, the earlier that children are enrolled and the longer they stay, proportionally more may be expected in the quality and amount of influence.

The social implications of these findings could be far reaching -- again noting the limitations of the present samples upon which these findings are based. First of all the findings suggest, along with findings from other studies, that children from disadvantaged social backgrounds can be raised to levels of functioning which augur well for later participation in the school system. The import of this finding is to be found in the possibility of breaking the historical cycle of poverty and disadvantage through developing children to cope with the normal educational and other institutions in society. Children raised to such intellectual levels and social adequacy in functioning should be far more equipped than their elders to cope with contemporary institutions. Among other things, development of positive indices of adequacy and emotional health in these children (noted in our previous progress report) has significance for community mental health for entire subpopulation groups in society.

The comparatively large gains of the advantaged children also have many implications for mental health, education, child development and especially with regard to the social role of women and the value of combined group care home-rearing of infants (as opposed to exclusive home-rearing). There is also the suggestion that early and continuing cognitive stimulation in the context of good emotional care may be able to raise the general

population to intellectual norms not previously observed even in general middle class populations. This is not to say that heredity factors are necessarily hereafter ruled out. It is to say that the future distributions of intellectucal scores could fall at a considerably higher mean than present population norms show. The probability of 7 children reaching a mean of 143 IQ points must be considered in the light of the fact that a level of 140 IQ or more is ordinarily found in considerably less than 1% of any large population group -- and 5 of our 7 children reached or exceeded this level. Clearly, if such levels were to be regularly developed through infant care centers of this kind throughout any region, the nature and expectations of our current elementary and advanced educational institutions might have to change drastically. We shall, however, wish to replicate these results on more children and follow up children, through both evaluations and continuing care programs, over several years of development prior to reaching any firm conclusions.

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Table 1

Change in Bayley Mental Scale Scores (MDI) from Time 1 to Time 2 for a Sample of Disadvantaged Infants Participating in Demonstration Program for a Mean of 9 Months

N = 5

Infants	Bayley Mental Scale MDI Time 1	Time 2	Change
N	118	136	18
O	80	126	46
P	78	105	27
Q	96	98	2
R	88	112	24
$\bar{X}$	92.0	115.4	23.4
t			3.2909**
df			4
Mean CA	4.9	13.0	
X Mos. in Day Care	1.2	8.8	
X Mos. in Program	1.2	8.8	
X Mos. in Program minus absences	-	7-8	

** $p < .025$, 1 tail

Table 2

Comparison of Mental Test Scores of Two Groups of Infants Varying in Age and Duration of Participation in Demonstration Program

	Infants	Time 1 Bayley Mental Scale (MDI)	Time 2 (MDI)	Time 3 Binet (IQ)	$T_1 - T_2$	$T_2 - T_3$	$T_1 - T_3$
	A		111	114		+3	
	B		151	137		-14	
	C	a	113	122		+ 9	
	D		100	115		+15	
	E		100	128		+28	
Group	F		137	112		-25	
A		$\bar{X}$	118.67	121.33		2.67	
		t				.3370	
(N=6)		df				5	
	$\bar{X}$ CA		21.66	29.33			
	$\bar{X}$ Mos. in Program		2.0	10.08			
	$\bar{X}$ Mos. in Day Care		15.08	23.33			
	T	107	127	143	+20	+16	+36
	U	124	121	146	- 3	+25	+22
	V	81	138	140	+57	+ 2	+59
	W	117	132	152	+15	+20	+35
	X	113	118	125	+ 5	+ 7	+12
	Y	136	125	129	-11	+ 4	- 7
Group	Z	120	134	170	+14	+36	+50
B		$\bar{X}$ 114.0	127.87	143.57	13.86	15.71	29.57
		t			1.6731	3.3622***	3.4657***
(N=7)		df			6	6	6
$\bar{X}$ CA		11.42	17.57	26.71			
$\bar{X}$ Mos. in Day Care		7.07	13.29	22.36			
$\bar{X}$ Mos. in Program		2.0	8.21	17.14			
Differences							
$\bar{X}$			9.20	22.24			
t			1.1001	3.1101***		1.4713	
df			11	11		11	

a group A entered Mothercraft before program began, so not measured at this age.

* $p \leq .05$, 1 tail

** $p \leq .025$, 1 tail

*** $p \leq .01$, 1 tail